ABSTRACT

An internal combustion engine (1) generates power by burning a mixture of fuel and air in each combustion chamber 3. The internal combustion engine 1 is provided with an in-cylinder pressure sensor (15) disposed in each combustion chamber (3) and an ECU (20). The ECU (20) calculates control parameters at two predetermined points, each of which is a product of an in-cylinder pressure detected by the in-cylinder pressure sensor (15) and a value obtained by exponentiating an in-cylinder volume at the timing of detecting the in-cylinder pressure with predetermined index, as well as calculates a correction value of a fuel injection quantity based upon a difference in the control parameter between the two predetermined points. One of the two predetermined points is set after an intake valve (Vi) opens and before an ignition plug (7) ignites, and the other is set after the ignition plug (7) ignites and before an exhaust valve (Ve) opens.